

AMENDMENTS TO THE CLAIMS

The claims in this listing will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Withdrawn – Currently Amended) A fluorescent protein described in the following (a) or (b):

(a) a protein having the amino acid sequence shown in SEQ ID NO: 1; or

(b) a protein[[,]] in the form of a monomer having the amino acid sequence shown in SEQ ID NO: 1 except that which has an amino acid sequence comprising a deletion, substitution, and/or addition of 1 to 20 amino acids have been mutated by deletion, substitution and/or addition with respect to the amino acid sequence shown in SEQ ID NO: 1, which has fluorescence properties equivalent to the protein having the amino acid sequence shown in SEQ ID NO: 1, ~~and which exists in the form of a monomer.~~

2. (Withdrawn) A fluorescent protein described in the following (a) or (b):

(a) a protein having the amino acid sequence shown in SEQ ID NO: 3, 5, 7 or 9; or

(b) a protein, which has an amino acid sequence comprising a deletion, substitution, and/or addition of 1 to 20 amino acids with respect to the amino acid sequence shown in SEQ ID NO: 3, 5, 7 or 9, and which has fluorescence properties equivalent to the protein having the amino acid sequence shown in SEQ ID NO: 3, 5, 7 or 9, respectively.

3. (Withdrawn) A fluorescent protein described in the following (a) or (b):

(a) a protein having the amino acid sequence shown in SEQ ID NO: 11, 13, 15, 17, 19, 21, 23, 25, 27 or 29; or

(b) a protein, which has an amino acid sequence comprising a deletion, substitution, and/or addition of 1 to 20 amino acids with respect to the amino acid sequence shown in SEQ ID NO: 11, 13, 15, 17, 19, 21, 23, 25, 27 or 29, and which has fluorescence properties equivalent to the protein having the amino acid sequence shown in SEQ ID NO: 11, 13, 15, 17, 19, 21, 23, 25, 27 or 29, respectively.

4. (Currently Amended) DNA encoding a fluorescent protein described in the following (a) or (b):

(a) a protein having the amino acid sequence shown in SEQ ID NO: 1; or

(b) a protein[[,]] in the form of a monomer having the amino acid sequence shown in SEQ ID NO:1 except that 1 to 20 amino acids have been mutated by deletion, substitution and/or addition ~~in which 1 to 20 amino acids have been deleted, substituted, and/or added,~~ which protein has fluorescence properties equivalent to the protein having the amino acid sequence shown in SEQ ID NO: 1, ~~and which exists in the form of a monomer.~~

5. (Withdrawn) DNA encoding a fluorescent protein described in the following (a) or (b):

(a) a protein having the amino acid sequence shown in SEQ ID NO: 3, 5, 7 or 9; or

(b) a protein, which has an amino acid sequence comprising a deletion, substitution, and/or addition of 1 to 20 amino acids with respect to the amino acid sequence shown in SEQ ID NO: 3, 5, 7 or 9, and which has fluorescence properties equivalent to the protein having the amino acid sequence shown in SEQ ID NO: 3, 5, 7 or 9, respectively.

6. (Withdrawn) DNA encoding a fluorescent protein described in the following (a) or (b):

(a) a protein having the amino acid sequence shown in SEQ ID NO: 11, 13, 15, 17, 19, 21, 23, 25, 27 or 29; or

(b) a protein, which has an amino acid sequence comprising a deletion, substitution, and/or addition of 1 to 20 amino acids with respect to the amino acid sequence shown in SEQ ID NO: 11, 13, 15, 17, 19, 21, 23, 25, 27 or 29, and which has fluorescence properties equivalent to the protein having the amino acid sequence shown in SEQ ID NO: 11, 13, 15, 17, 19, 21, 23, 25, 27 or 29, respectively.

7. (Currently Amended) DNA described in the following (a) or (b):

(a) DNA having the nucleotide sequence shown in SEQ ID NO: 2; or

(b) DNA[[,]] having the nucleotide sequence shown in SEQ ID NO: 2, ~~in which~~ except ~~that 1 to 60 nucleotides have been mutated by deletion, substitution, and/or addition~~ deleted, substituted, and/or added, and which has ~~a nucleotide sequence encoding~~ encodes a protein that in the form of a monomer has fluorescence properties equivalent to the protein encoded by the nucleotide sequence shown in SEQ ID NO: 2 ~~and that exists in the form of a monomer~~.

8. (Withdrawn) DNA described in the following (a) or (b):

(a) DNA having the nucleotide sequence shown in SEQ ID NO: 4, 6, 8 or 10; or

(b) DNA, which has a nucleotide sequence comprising a deletion, substitution, and/or addition of 1 to 60 nucleotides with respect to the nucleotide sequence shown in SEQ ID NO: 4, 6, 8 or 10, and which has a nucleotide sequence encoding a protein that has fluorescence properties equivalent to the protein encoded by the nucleotide sequence shown in SEQ ID NO: 4, 6, 8 or 10, respectively.

9. (Withdrawn) DNA described in the following (a) or (b):

(a) DNA having the nucleotide sequence shown in SEQ ID NO: 12, 14, 16, 18, 20, 22, 24, 26, 28 or 30; or

(b) DNA, which has a nucleotide sequence comprising a deletion, substitution, and/or addition of 1 to 60 nucleotides with respect to the nucleotide sequence shown in SEQ ID NO: 12, 14, 16, 18, 20, 22, 24, 26, 28 or 30, and which has a nucleotide sequence encoding a protein that

has fluorescence properties equivalent to the protein encoded by the nucleotide sequence shown in SEQ ID NO: 12, 14, 16, 18, 20, 22, 24, 26, 28 or 30, respectively.

10. (Previously Presented) A recombinant vector having the DNA according to claim 4.
11. (Previously Presented) A transformant having the DNA according to claim 4.
12. (Withdrawn) A fusion fluorescent protein, which consists of the fluorescent protein according to claim 1 and another protein.
13. (Withdrawn) The fusion protein according to claim 12, wherein another protein is a protein that localizes in a cell.
14. (Withdrawn) The fusion protein according to claim 12, wherein another protein is a protein specific to a cell organelle.
15. (Withdrawn) The fusion protein according to claim 12, wherein another protein is a fluorescent protein.
16. (Withdrawn) The fusion protein according to claim 15, which generates intramolecular FRET.
17. (Withdrawn) A method for analyzing the localization or dynamics of a protein in a cell, which is characterized in that the fusion protein according to claim 12 is allowed to express in the cell.
18. (Currently Amended) A fluorescent reagent kit, which comprises:

the fluorescent protein of claim 1;

DNA encoding a fluorescent protein described in the following (a) or (b):

(a) a protein having the amino acid sequence shown in SEQ ID NO: 1; or

(b) a protein[[,]] in the form of a monomer having the amino acid sequence shown in SEQ ID NO: 1, ~~in which 1 to 20 amino acids have been~~ except that 1 to 20 amino acids have been mutated by deletion, substitution and/or addition ~~deleted, substituted, and/or added,~~ which protein has fluorescence properties equivalent to the protein having the amino acid sequence shown in SEQ ID NO: 1, ~~and which exists in the form of a monomer;~~

a recombinant vector having DNA encoding a fluorescent protein described in the following (a) or (b):

(a) a protein having the amino acid sequence shown in SEQ ID NO: 1; or

(b) a protein[[,]] in the form of a monomer having the amino acid sequence shown in SEQ ID NO: 1 except that 1 to 20 amino acids have been mutated by deletion, substitution and/or addition, ~~in which 1 to 20 amino acids have been deleted, substituted, and/or added,~~ which protein has fluorescence properties equivalent to the protein having the amino acid sequence shown in SEQ ID NO: 1, ~~and which exists in the form of a monomer;~~ or

a transformant having the DNA encoding a fluorescent protein described in the following (a) or (b):

(a) a protein having the amino acid sequence shown in SEQ ID NO: 1; or

(b) a protein[[,]] in the form of a monomer having the amino acid sequence shown in SEQ ID NO: 1 except that 1 to 20 amino acids have been mutated by deletion, substitution and/or addition, ~~in which 1 to 20 amino acids have been deleted, substituted, and/or added,~~ which protein has fluorescence properties equivalent to the protein having the amino acid sequence shown in SEQ ID NO: 1, ~~and which exists in the form of a monomer;~~

~~or a fusion protein, which consists of the fluorescent protein according to claim 1 and another protein.~~

19. (Withdrawn) A chromoprotein described in the following (a) or (b):

(a) a protein having the amino acid sequence shown in SEQ ID NO: 37; or

(b) a protein, which has an amino acid sequence comprising a deletion, substitution, and/or addition of 1 to 20 amino acids with respect to the amino acid sequence shown in SEQ ID NO: 37, and which has light-absorbing properties.

20. (Withdrawn) A fluorescent protein described in the following (a) or (b):

(a) a protein having the amino acid sequence shown in SEQ ID NO: 39; or

(b) a protein, which has an amino acid sequence comprising a deletion, substitution, and/or addition of 1 to 20 amino acids with respect to the amino acid sequence shown in SEQ ID NO: 39, and which has fluorescence properties.

21. (Withdrawn) A fluorescent protein described in the following (a) or (b):

(a) a protein having the amino acid sequence shown in SEQ ID NO: 41, 43, 45, or 47; or

(b) a protein, which has an amino acid sequence comprising a deletion, substitution, and/or addition of 1 to 20 amino acids with respect to the amino acid sequence shown in SEQ ID NO: 41, 43, 45, or 47, which has fluorescence properties, and which has a stokes shift of 100 nm or greater.

22. (Withdrawn) DNA encoding a chromoprotein described in the following (a) or (b):

(a) a protein having the amino acid sequence shown in SEQ ID NO: 37; or

(b) a protein, which has an amino acid sequence comprising a deletion, substitution, and/or addition of 1 to 20 amino acids with respect to the amino acid sequence shown in SEQ ID NO: 37, and which has light-absorbing properties.

23. (Withdrawn) DNA encoding a fluorescent protein described in the following (a) or (b):

(a) a protein having the amino acid sequence shown in SEQ ID NO: 39; or

(b) a protein, which has an amino acid sequence comprising a deletion, substitution, and/or addition of 1 to 20 amino acids with respect to the amino acid sequence shown in SEQ ID NO: 39, and which has fluorescence properties.

24. (Withdrawn) DNA encoding a fluorescent protein described in the following (a) or (b):

(a) a protein having the amino acid sequence shown in SEQ ID NO: 41, 43, 45, or 47; or

(b) a protein, which has an amino acid sequence comprising a deletion, substitution, and/or addition of 1 to 20 amino acids with respect to the amino acid sequence shown in SEQ ID NO: 41, 43, 45, or 47, which has fluorescence properties, and which has a stokes shift of 100 nm or greater.

25. (Withdrawn) DNA described in the following (a) or (b):

(a) DNA having the nucleotide sequence shown in SEQ ID NO: 38; or

(b) DNA, which has a nucleotide sequence comprising a deletion, substitution, and/or addition of 1 to 60 nucleotides with respect to the nucleotide sequence shown in SEQ ID NO: 38, and which has a nucleotide sequence encoding a protein that has light-absorbing properties.

26. (Withdrawn) DNA described in the following (a) or (b):

(a) DNA having the nucleotide sequence shown in SEQ ID NO: 40; or

(b) DNA, which has a nucleotide sequence comprising a deletion, substitution, and/or addition of 1 to 60 nucleotides with respect to the nucleotide sequence shown in SEQ ID NO: 40, and which has a nucleotide sequence encoding a protein that has fluorescence properties.

27. (Withdrawn) DNA described in the following (a) or (b):

(a) DNA having the nucleotide sequence shown in SEQ ID NO: 42, 44, 46 or 48; or

(b) DNA, which has a nucleotide sequence comprising a deletion, substitution, and/or addition of 1 to 60 nucleotides with respect to the nucleotide sequence shown in SEQ ID NO: 42, 44, 46 or 48, and which has a nucleotide sequence encoding a protein that has fluorescence properties and has a stokes shift of 100 nm or greater.

28. (Withdrawn) A recombinant vector having the DNA according to claim 22.

29. (Withdrawn) A transformant having the DNA according to claim 22.

30. (Withdrawn) A fusion protein, which consists of the protein according to claim 19 and another protein.

31. (Withdrawn) The fusion protein according to claim 30, wherein another protein is a protein that localizes in a cell.

32. (Withdrawn) The fusion protein according to claim 30, wherein another protein is a protein specific to a cell organelle.

33. (Withdrawn) The fusion protein according to claim 30, wherein another protein is a fluorescent protein.

34. (Withdrawn) The fusion protein according to claim 33, which generates intramolecular FRET.

35. (Withdrawn) A method for analyzing the localization or dynamics of a protein in a cell, which is characterized in that the fusion protein according to claim 30 is allowed to express in the cell.

36. (Withdrawn) A reagent kit, which comprises:

the fluorescent protein of claim 19;

DNA encoding a chromoprotein described in the following (a) or (b):

(a) a protein having the amino acid sequence shown in SEQ ID NO: 37; or

(b) a protein, which has an amino acid sequence comprising a deletion, substitution, and/or addition of 1 to 20 amino acids with respect to the amino acid sequence shown in SEQ ID NO: 37, and which has light-absorbing properties;

a recombinant vector having DNA encoding a chromoprotein described in the following (a) or (b):

(a) a protein having the amino acid sequence shown in SEQ ID NO: 37; or

(b) a protein, which has an amino acid sequence comprising a deletion, substitution, and/or addition of 1 to 20 amino acids with respect to the amino acid sequence shown in SEQ ID NO: 37, and which has light-absorbing properties;

a transformant having DNA encoding a chromoprotein described in the following (a) or (b):

(a) a protein having the amino acid sequence shown in SEQ ID NO: 37; or

(b) a protein, which has an amino acid sequence comprising a deletion, substitution, and/or addition of 1 to 20 amino acids with respect to the amino acid sequence shown in SEQ ID NO: 37, and which has light-absorbing properties; or

a fusion protein which consists of the protein according to claim 19 and another protein.